



MULTIFEED WAGON User Manual



Proudly Manufactured by Coombridge Industries

Our products have a proven performance backed up by the company's commitment to design development and customer satisfaction.

DISCLAIMER

Agtrailer products are built and designed with the best health and safety practices kept in mind. However, the use of the machinery still presents some risk of personal injury or damage. That risk is greatly decreased if proper instructions and cautions are followed. The manufacturer will not be responsibly for any damage, injury or consequential loss arising out of misinterpretation or failure to follow recommended procedures; nor will it be liable for any damage caused by or arising out of modification or misuse of its product.



WARNING

Before using the machinery, each user should become thoroughly familiar with all warnings, instructions and recommendations outlined within this product manual.

TABLE OF CONTENTS

1.	INTRODUCTION	
	Quality Guarantee Warranty	4 4
2.	ABOUT YOUR MACHINE	
	Identification	5
	Features	5
	Specifications	6
	Wagon Upgrades	6
3.	HAZARD MANAGMENT	
	Safety Checklist	7
4.	MAINTENANCE	
	Daily Care	8
	Weekly Care	8
	Yearly Care	9
5.	OPERATIONAL USE	
	Factory Settings	10
	Checks on Delivery	10
	Checks Prior to Running	10
	Oil Flow Requirements	10
	Cross Conveyor	10
	Hydraulic Hoses	10
	Hydraulic Sensor Valve	11
	Controlling Floor Speed	11
	Wagon Bin Capacity	11
	Feeding Out	12
	Rear Bulk Unloading	12
	Tyre Inflation	12
6.	COMPONENT LISTS	
	Major Components	13
	Elevator Drive System	15
	Floor Drive System	15
	Side Conveyor System	15
	Hydraulic Hose Kit	16
	Grease Line Kit	16
	Load Cell Parts	10
		17

TABLE OF CONTENTS

7.	LOAD CELL & ICONIX FX15 MONITOR
~ •	External Battery Pack
8.	WAGON TROUBLESHOOTING
	Load Cell System
	General
	Conveyor Drive System
	Elevator Drive System
	Floor Drive System 21-22
9.	APPENDIXES
	Appendix 1: Flow Control Adjustment for Conveyor 24

INTRODUCTION

Thank you for purchasing an Agtrailer Multifeed Wagon proudly manufactured by Coombridge Industries Limited. Agtrailer was established in 1995 as a South Island based offshoot of the farm machinery manufacturers Coombridge and Alexander Ltd. The Agtrailer product range has been developed through over 60 years of experience manufacturing agricultural machinery. Agtrailer machinery is designed specifically for the New Zealand conditions, which require large feeding loads, all-year road feeding and dense, more diverse feed types. Our products have a proven performance backed up by the company's commitment to design development and customer satisfaction.

Quality Guarantee

Agtrailer products are guaranteed against any defects in either material or manufacture for a period of 12 months from delivery date, provided that the equipment has not been subject to abuse or misuse, operated incorrectly, overloaded or used for purposes other than for which the equipment is designed or is not maintained correctly or if fitted with other than genuine parts. Claims are only valid when approved by the manufacturer. No person or agent is authorized to assume any liability.

As the use of the equipment is outside our control we can only guarantee quality. No liability for loss, direct expenses incurred from the use of this equipment or from any other cause of in respect of performance can be accepted. Defective parts must be returned, freight paid, to the manufacturer or available to be inspected as directed. Should such parts prove to the manufacturers satisfaction be faulty, repair of or replacement of defective parts shall constitute fulfillment of guarantee obligations. Parts destroyed, lost or tampered with nullify guarantee.

Warranty

Agtrailer products as designed and supplied by Coombridge Industries Ltd are warranted against faulty workmanship and defective materials for a period of 12 months from date of purchase. Such warranty is subject to the following conditions:

1) This warranty covers the repair or replacement of parts or machinery sold by Coombridge Industries Ltd and damaged as a result of faulty workmanship of materials in such part of machinery. It does not extend to any other loss or damage including consequential loss or damage to other property or persons.

2) No responsibility will be accepted for repairs made other than by Coombridge Industries Ltd or its accredited agent and without prior authorization by Coombridge Industries Ltd.

3) Without limiting the generality of paragraph 1 above, this warranty does not cover the following;

- a) Losses sustained through delay in delivery.
- b) Travel expenses.
- c) Damage caused by accident, misuse or abuse.
- d) Damage to any goods, which have been altered or modified by someone other than Coombridge Industries Ltd or its authorized dealers.

4) Procedure for recovery under warranty: No loss or damage will be covered under warranty unless the purchaser follows the following procedures.

a) If the purchase is through an authorized dealer:

i. Contact the dealer who will advise Coombridge Industries of details of the goods concerned, the loss or damage sustained and the circumstances in which the loss or damage arose.

ii. Coombridge Industries Ltd will then decide if such loss or damage is within the terms of warranty and shall advise the dealer as to how the loss or damage is to be repaired.

b) If the purchase is made direct with the manufacturer:

i. The loss or damage should be reported directly to Coombridge Industries Ltd who will advise whether it is covered by the warranty and direct the purchaser accordingly as to what action is to be taken.



ABOUT YOUR MACHINE

Identification

Each Agtrailer machine has a serial number which can be located on a silver plate on the tow beam beside and just behind the tow eye. Please refer to this serial number for all parts and servicing requests. The serial plate also has valuable information including the wagon tare weight and gross vehicle mass.



Features



Fully Automatic

The floor and elevator drive systems operate in tandem with an auto sensor control unit allowing the operator to focus on driving.





Designed to handle all common feed types allowing all-year round feeding.



Modular Design

The floor, sides, chains, bars and stub axles are all conveniently detachable for servicing allowing an affordable option.



Anti-Corrosive

All parts are fully blasted, primed and urethane painted or galvanized. Additional galvanizing is available.



Manoeuvrable

All models are fitted with a tandem independently oscillating 'walking beam' axle.



Upgradable

Certain bin sizes can be upgraded to a larger capacity with bolt on modules.



ABOUT YOUR MACHINE

Specifications

	12m³	14m³	16m³ - STD	16m³ - HD	18m³	20m³
Axle	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem
Stub Axles	70 sq.	70 sq.	70 sq.	80 sq.	80 sq.	90 sq.
Tyres	12.5/80-15.3	400/60-15.5	400/60-15.5	15/70-18	15/70-18	400/60-22.5
Ladder	Standard	Standard	Standard	Standard	Standard	Standard
Floor & Elevator Drive	Gearbox	Gearbox	Gearbox	Gearbox	Gearbox	Gearbox
Swivel Tow eye	Optional	Optional	Standard	Standard	Standard	Standard
Tare	~3740 kg	~4060 kg	~4300 kg	~4400 kg	~4680 kg	~5040 kg
Max Load Weight	7200 kg	8400 kg	9600 kg	10800 kg	10800 kg	12000 kg
GVM	~10940 kg	~12460 kg	~13900 kg	~15200 kg	~15480 kg	~17040 kg
Overall Length	7.1 m	7.1 m	7.1 m	7.1 m	8.1 m	8.1 m
Overall Width	2.8 m	2.9 m	3.1 m	3.1 m	2.9 m	3.1 m
Loading Height	2.4 m	2.6 m	2.7 m	2.7 m	2.6 m	2.8 m
Bin Length	4.2 m	4.2 m	4.2 m	4.2 m	5.0 m	5.0 m
Bin Width	2.2 m	2.2 m	2.2 m	2.2 m	2.2 m	2.2 m
Bin Height	1.3 m	1.5 m	1.6 m	1.6 m	1.5 m	1.6 m

Note: 22-25m³ capacity wagons are custom built. GVM will change with optional extras.

Wagon Upgrades

- The Multifeed wagon is available in two chassis sizes, which allow five capacity upgrades ranging from 12 cubic metre to 20 cubic metre. Smaller machines allow for staged capacity upgrades with bolt on side panel extensions, which can be purchased individually to upgrade your current machine.
- Chassis Type I includes the 12, 14 and 16m³ capacities. Chassis Type II includes the 18, 20 and 22m³ capacities.





HAZARD MANAGEMENT

Safety Checklist

1. Read Manual First

Each user should become thoroughly familiar with all warnings, instructions and recommendations outlined within this product manual. The operators must be trained and competent before using the machinery.

2. Visual Check

Do a visual check around the machine to ensure it is in working order. Follow the **Maintenance Checklist** section to assist with making sure your wagon is in proper working order.

3. Incident Prevention

Do not operate the machine when fatigue, stressed or drug or alcohol induced. These factors may cause poor judgment and results when operating the machine, which can lead to serious injury or death.

4. Protective Equipment

While operating the machine ensure you are wearing proper protective gear. This may include but is not limited to: ear protection, safety glasses, coveralls, work boots and gloves.

5. Fire Hazards

It is recommended to carry a fire extinguisher with you in case of fire hazards. Take care when operating the machine during extremely hot and dry periods. Regularly clear combustible material from moving parts.

6. Keep off while operating

While operating the machine, keep out of the bin and away from the elevator or teaser bars. Do not stand on any part of the machine when it is running.

7. TURN IT OFF

In case of a blockage, turn off all equipment before attempting to clear the blockage. In case of an emergency or an accident turn off the machine immediately until the situation is stable.

8. DO NOT Alter or Overload Wagon

Do not preform any alterations to the machine that would make the machine unfit for safe operation and do not overload the machine. Refer to the Wagon Bin Capacity section on page 11.

9. Safety While Servicing

Remember to release all hydraulic pressure from implements when performing any servicing checks. Locate oil leaks wearing gloves and with a piece of cardboard or cloth.

10. Road Towing

When towing on the road check that your machine is within proper road dimensions, mass and is at the correct towing speed. Remember to use appropriate LED rear lighting, signal lighting and over wide panels. Refer to NZTA for more information.



MAINTENANCE

Daily Care

Job Type	Part	Details
Grease	Elevator	One nipple on the drive shaft bearing.Two remote grease lines connected to idler shaft.
	Floor	• Four floor shaft bearings (2 at each end).
Check	General	• Walk around the machine and check for damage, condition and inflation of tyres, loose bolts including wheel nuts and missing hubcaps.

Weekly Care

Job Type	Part	Details	
Grease	Axle	 Two grease nipples at each end of axle pin. Two remote grease lines. If necessary jack up axle pin to assist grease flow. 	
	Stub Axle	Grease nipple on each hub.	
	Screw Jack	One nipple.	
	Conveyor Shaft	 Drive shaft has one grease nipple at end of shaft. The bearing in the galvanized motor box of the drive shaft has a grease nipple access from underneath. The idler shaft has grease nipples on each end. 	
Oil	Conveyor Chain	 Oil conveyor chain regularly, especially before storage. Vegetable oil works best. Oil daily when feeding acidic feed types. 	
Check	Chain Tension	 Elevator: The elevator bars must touch and put pressure on the center guides. If the tensioner spring is not pumping when operating then it needs to be tightened. Do not over-tighten the spring loaded tension guides must retain their full range of movement. Floor: The chain must touch all of the six underbody guide pads with a sag between pads of approximately 50 mm. Quick check horizontal link of chain is level with bottom of RHS. Conveyor: Never over-tighten conveyor roller chains as they need to lift 100 mm off the floor in the center of the conveyor. Note: Failure to monitor and adjust will lead to serious mechanical damage and will void warranty. 	
	Tyre Pressure	Check tyre pressure. Refer to the Tyre Inflation section on page 12.	
	Gearbox Oil	• Check gearbox oil weekly. If necessary top up with S.A.E. 85w-140 gear oil.	



MAINTENANCE

Yearly Care

Job Type	Part	Details
Oil	Gearbox	• Replace gearbox oil with S.A.E. 85w-140. The elevator box requires approximately 1.5 litres and the floor box requires about 5 litres.
Check	Stub Axles	 <u>Rumble Test:</u> Jack each wheel up and spin the wheel to check the wheel bearings. If they sound dry and rumble then you may need to change bearings and the seal. Check stub axle bolts are secured tightly. Check for play in the bearings. The castle nut may need to be tightened.
	Axle	• Make sure all grease points accept grease. You may need to put a jack under the centre bushes to take the weight off and allow the grease to flow.
	Conveyor	 Check rubber coupling in galvanized motor box. Disconnect motor hydraulics and pull chains towards you to make sure there is no resistance. If not running freely check bearings in each shaft. Oil chain with vegetable oil. If you are running out of adjustment you may need to take a link out of the chain. We can supply half links if it is not possible to get a full link out when you are out of adjustment. Adjust until you are able to lift the bars off the bed of the conveyor by about 100 mm near the centre of the conveyor.
	Teaser Bars	 Check condition of sprockets. The tips must have a slight outwards kink and the two sprocket plates must be parallel. If the chain comes off the sprockets, it can close the gap between the two plates and not allow the vertical links of the chain to sit between the two plates. If you are running out of adjustment on the chains you may be able to take a link out of the chain. If you are to take a link out you must take a horizontal and vertical link out so you do not introduce a twist in the chain. Check for play in the idler shaft. There is a synthetic bush at each end of the shaft. String and long chop silage can wrap itself around the end on the shaft and work its way onto the bush. You can use a crowbar to check how much movement is in the bush. If you think the bush needs a closer inspection you will need to split the teaser bar chain and drop the shaft out. If there is no grease getting into the bush it is generally because it hasn't been greased regularly and silage has worked its way into the bush and blocked the hole, you will need to remove the shaft to clear the hole. NOTE: Exercise extreme care when splitting and removing teaser bar chains. Tie off the top bars to the top shaft so the chain cannot rotate and teaser spikes fall back on you.
	Floor Bars	• As with the teaser bars, check the sprockets for clearance between plates and tip in- tegrity. If you are running out of adjustment you may need to remove a link of chain (horizontal and vertical link). If any bars are bowed or bent, detach to straighten or replace them.
	Framework	Check the bodywork of the machine for any cracks.

OPERATIONAL USE

Factory Settings

All Agtrailer products are test run on the completion of assembly. Before the machine is delivered a series of quality control checks are completed and signed off by the manufacturer. If you should feel that there is something out of the norm please contact the manufacturer for advisory.

Checks on Delivery

Walk around the machine looking for any fixings that may have vibrated loose in transit to the farm. Retighten if necessary. Check floor chain tension. Tighten rear shaft adjusters (2 per side) until the under deck chain is just touching all the six support pads with approximately a 50 mm sag between the pads. Check the elevator teaser bar chains. The elevator bars must touch and put pressure on the centre guides. If the tensioner spring is not pumping when operating then it needs to be tightened. Do not over tighten the spring loaded tension guides must retain their full range of movement. Check for wheel nut tension (350 Nm torque).

Checks Prior to Running

Oil Flow Requirements

Set tractor oil flow to deliver at least 24 hp (17.8 kw). Set the tractor's 'Ram/Motor' supply mode to 'motors.' The tractor must provide the wagon with 55-60 litres of oil at 165 +bar (2400psi). For single pump tractors with fixed displacement pumps, reasonably high tractor rpm will be necessary and flow control set at maximum. The speed of the elevator bars is directly proportional to oil flow from the tractor. Increase or decrease RPM or flow control to get the correct speed. If your tractor does not have a sufficient flow and pressure then the Multifeed Wagon may not operate properly. Contact the manufacturer for advice.

Cross Conveyor

The chain and slat cross conveyor design may initially seem loud and rattle in comparison to a belt design and you may think it is running too fast but it's speed is factory set and can not over speed. The noise recedes when the chain is loaded. You will not need to adjust the cross conveyor chain tensions for some time and then do not over-tighten. Always maintain at least 100 mm of lift on the center bar. Speed can be adjusted $\pm 12\%$ but is not normally recommended. For instructions on adjusting flow control of conveyor refer to *Appendix 1*.

• Elevator and Floor Tension

IMPORTANT: It is not unusual for chain systems that have not yet bedded into sprockets, to loosen, as paint is lost from sprockets and chain surfaces. Check and adjust elevator and floor tension after first, third and sixth load. Thereafter, visually check tensions as part of daily routine.



OPERATIONAL USE

Hydraulic Hoses

Every new wagon has been test run in the factory before delivery so all hydraulic hoses and motors contain oil. On delivery, the two hoses from the front of the Multifeed Wagon must be connected to the external hydraulic system of the tractor. One hose out of the valve on the wagon drawbar is the live (marked on valve with red tape) or high-pressure hose and must be connected to either a double or single acting outlet point on the tractor. The other hose is the return of oil back to the tractor and may be returned through the second half of the double acting or back to tank.

Hydraulic Sensor Valve

A sensor valve is included in the alloy block on the drawbar of the wagon. These valves bypass the oil from the floor motor when there is excessive loading on the elevator bars. The bypass pressure is preset in the factory and advice should be sought before changing. The operator should notice that under full load, the floor pauses (stops and starts) to allow the elevator time to clear and run smoothly. If the floor brings the load forward continuously without any pausing and the elevator bars seem to stall out (under load) then the sensor valve may be set to high. Seek advice from the manufacturer for further directions. Incorrect adjustment may cause serious damage and will void warranty.

Controlling Floor Speed

The floor system of the wagon can be stopped while the elevator bars are still rotating by turning the control stick connected to the valve clockwise. This stick can also be used to control the floor speed from fast to stop. When the machine is factory tested the pointer on the floor speed control display should be preset so that with the wagon running the floor just stops with the pointer fully clockwise. If the floor does not stop the neutral can be reset with the following procedures. **Note: Do not turn valve more than one full turns anti-clockwise. More than one turn will adversely effect the performance of machine.**

- 1. With the hydraulics running and the pointer turned to the stop position.
- 2. With 4mm allen key, loosen setscrew on pointer.
- 3. Turn control stick clockwise till floor just stops moving.
- 4. Tighten pointer.

Bin Capacity	Max Load Weight
12 cubic metre	7200 kg
14 cubic metre	8400 kg
16 cubic metre	9600 kg
18 cubic metre	10800 kg
20 cubic metre	12000 kg

Wagon Bin Capacity



OPERATIONAL USE

Feeding Out

Load your choice of feed into the wagon and after engaging hydraulics with floor speed pointer on ³/₄ speed, the elevators, conveyor and floor drive system will work together to feed out the material. Decrease or increase delivery speed by rotating the control stick.

Rear Bulk Unloading

Loosen the back door latches so they will open easily with backpressure. If hydraulics is coupled to a double acting system on the tractor, place the hydraulic lever on the tractor into the reverse position to which you have been feeding out. The elevator bars will not turn and all the oil will circulate through the floor motor pushing the load out the back of the wagon. If hydraulics is coupled into a single acting system, reverse the two hoses at the tractor end. **Remember to keep moving forward while unloading to prevent damage to the floor bars**.

Tyre Inflation

The following tyre inflation guideline is based on information provided by our tyre suppliers. If your tyre size is not included in the list and you cannot find the information on the tyre, contact the wagon manufacturer for further details.

Tyre Specifications	Inflated Pressure	
	Bar	PSI
12.5/80-15.3 16PR TL Alliance 320 Implement Rib	4.3 - 5.9	62 - 85
400/60-15.5 14PR TL Alliance 328 Floatation I-3	2.5 - 3.6	36 - 52
15/70-18 16PR TL Alliance 320 Implement Rib	3.6 - 5.8	52 - 84
400/60-22.5 18PR TL Alliance 328 Floatation I-3	4.3	62
500/60-22.5 16PR TL Alliance 328 Floatation I-3	2.8 - 4.4	41 - 64

Note: Refer to the tyre manufacturer for recommended inflation pressure values for specific speeds and loads.



CAUTION

In general the cutting of tyres on sharp stone tends to increase with higher pressures. Lowering pressures may help with this problem but when tyre pressures get too low they may roll of rims more easily. You may need to experiment to find the correct tyre pressures for your environment.

Major Components

Reference	Description			
Fig 1: 1	Back Gate Latches			
Fig 1: 2	Side Flare Extension			
Fig 1: 3	Elevator Drive Shaft System			
Fig 1: 4	Elevator Gearbox (see elevator components)			
Fig 1: 5	Control Stick			
Fig 1: 6	Hydraulic Hoses (see hydraulics components)			
Fig 1: 7	Swivel Tow eye (shown in picture)			
	Fixed Tow eye			
Fig 1: 8	Jack Stand			
Fig 1: 9	Hydraulic Cartridge Valve Block			
Fig 1: 10	Side Feed Conveyor (see conveyor components)			
Fig 1: 11	Side Conveyor Motor			
Fig 1: 12	12.5/80-15.3 Wheel & Tyre			
	400/60-15.5 Wheel & Tyre (shown in picture)			
	15/70-18 Wheel & Tyre			
	400/60-22.5 Wheel & Tyre			
	500/60-22.5 Wheel & Tyre			
Fig 1: 13	Mudguards			
Fig 1: 14	Floor Adjuster			

Figure 1



Figure 2



Figure 3



Figure 4



Elevator Drive System

Ref	Part No	Description
	AG0164	Complete Elevator Teaser Bars and Chain
Fig 2: 2	AG0065	Complete Elevator Drive Shaft
Fig 2: 4	AG0067	Complete Elevator Idler Shaft
	AG0027	Elevator Chain Joiner
Fig 3	0029	Elevator Gearbox: RT120 -4,1:1 1200Nm
	AG0119	Elevator Gearbox Key
	0035	Elevator Motor: 158-3209 -195cc, 25mm Shaft
	0268	Elevator Shaft Molly bushes
	AG0002	Elevator Shaft Sprockets
Fig 2: 16	AG0068-69	Elevator Spring Tensioner
	AG0162	Elevator Teaser Bar - Pattern A
	AG0163	Elevator Teaser Bar - Pattern B
	AG0136	Elevator Tensioner Adjusters
	0276	Elevator Tensioner Compression Spring
	0228	F208 Housing
	0227	UC208 Bearing
	0743	60x85x10 Seal
	0744	60x95x10 Seal

Side Conveyor System

Ref	Part No	Description
Fig 1: 10	AG0035	Complete Side Conveyor Bar & Chains
Fig 2: 11	AG0036	Side Conveyor Bars
Fig 2: 10	0198	Side Conveyor Chain - C2082H
	0213	Side Conveyor Chain Crank Link C2082H
	0211	Side Conveyor Chain Joiner C2082H
Fig 2: 12	AG0041	Side Conveyor Drive Shaft
Fig 2: 15	AG0178	Side Conveyor Idler Shaft
	0230	F205 Housing
	0225	UC205-16 Bearing
Fig 2: 9	0030	Side Conveyor Motor 158-3131- 66cc, 25mm Shaft
	0266	25mm/ 1" Coupling
	0267	Coupling Flexi Rubber

Floor Drive System

Ref	Part No	Description
	AG086	Complete Floor Bar and Chains for 12- 16m ³ wagon
	AG0179	Complete Floor Bar and Chains for 18- 25m ³ wagon
Fig 2: 6	AG0085	Floor Bars
	AG0092	Floor Chains and Blocks for 12-16m ³ wagon
	AG0093	Floor Chains and Blocks for 18-25m ³ wagon
	AG0027	Floor Chain Joiners
	AG0094	Floor Drive Shaft
	AG0096	Floor Drive Shaft Bush-Drive
Fig 2: 7	AG0097	Floor Drive Shaft Bush-Feed
	AG0098	Floor Drive Shaft Collar
Fig 4	0028	Floor Gearbox: RT400 – 35,2:1 4000Nm
	AG0120	Floor Gearbox Key
	AG0100	Floor Idler Shaft
	AG0101	Floor Idler Shaft Adjuster
	AG0102	Floor Idler Shaft Adjuster Rod - Inside
	AG0103	Floor Idler Shaft Adjuster Rod - Outside
	AG0104	Floor Idler Shaft Bush - Left
	AG0105	Floor Idler Shaft Bush - Right
	AG0106	Floor Idler Spacer Ring
	0031	Floor Motor: 100cc, 25mm Shaft (RT400)
	0034	Floor Motor: 195cc, 25mm Shaft (RT200)



Hydraulic Hose Kit

Reference	Qty	Hose Type	Cut Length (mm)	End 1	End 2
SW1	1	1/2" 2 Wire	4040	1/2" BSP Female	1/2" BSP Female
SW2	1	1/2" 2 Wire	4000	1/2" BSP Female	1/2" BSP Female
SW3	1	1/2" 2 Wire	3130	1/2" BSP Female	1/2" BSP Female
SW4	1	1/2" 2 Wire	3100	1/2" BSP Female	1/2" BSP Female
SW5	1	1/2" 2 Wire	3500	1/2" BSP Female	1/2" BSP Male
SW6	1	1/2" 2 Wire	3580	1/2" BSP Female	1/2" BSP Female
SW7	2	3/4" 2 Wire	2600	3/4" BSP Female	1/2" BSP Male

Grease Line Kit

Reference	Qty	Hose Type	Cut Length (mm)	End 1	End 2
GL1	2	1/4" 2 wire	700	1/4" BSP Male	1/4" BSP Male
GL2	2	1/4" 2 Wire	900	1/4" BSP Male	1/4" BSP Male
GL3	1	1/4" 2 Wire	620	1/4" BSP Male	1/4" BSP Male

Stub Axle Parts

Stub Axle	Part No	Description
ADR 70 sq.	0056	Complete Braked 70sq Stub Axle
	0050	Complete Non-braked 70sq Stub Axle
	0100	Bearing 32210 50/90x24.75
	0098	Bearing 30213 65/120x24.75
	0751	MK6 Seal
	0752	70mm Dust Cap
ADR 80 sq.	0057	Complete Braked 80sq Stub Axle
	0051	Complete Non-braked 80sq Stub Axle
	0747	Bearing 32212 60/110x29.75
	0748	Bearing 32215 75/130x33.25
	0754	MK6 Seal
	0753	80mm Dust Cap
ADR 90 sq.	0063	Complete Braked 90sq Stub Axle
	0755	Complete Non-braked 90sq Stub Axle
	0744	Bearing 32213 65/120x32.75
	0750	Bearing 33216 80/140x33.25
	0756	MK6 Seal
	0757	90mm Dust Cap

Note: Stub Axle Parts are a list of commonly used parts for the braked and non-braked 70, 80 and 90sq stub axles. To view a full list of stub axle parts and assembly contact Coombridge Industries Ltd.



Load Cell Parts

Part No	Description
0258	Iconix FX15 Display Monitor
0255	PVC Display Cover for FX15 Monitor
0745	Load Bar Signal Cable for Iconix FX15 Monitor
0746	Power Cable for Iconix FX15 Monitor
0253	7.0AH 12v Sealed Acid Battery
0256	PVC Battery Pouch
0254	12v Battery Charger
0257	5 Tonne Stainless Shear Beam for 12-16m ³ wagons
0260	20 Tonne Double Endea Shear Beam for 18-20m ³ wagons

Placement for 5T SB Load Cells



Placement for 20T DESB Load Cells



LOAD CELLS & ICONIX FX15 MONITOR

External Battery Pack

- The Iconix FX15 Monitor is powered by a 12V external battery pack. Supplied with the Iconix FX15 Monitor are two 12V batteries together with a battery charger (AC adaptor).
- Battery life and charging frequency will depend on usage and battery care. We recommend always charging the battery with the supplied charger for 6-8 hours. Note: Do not use heavy-duty fast chargers, as it will damage the battery.
- The Iconix FX15 Monitor can also be powered from the round pin connection (7-pin) designed to fit the tractors auxiliary ply.

User Guide

- 1. To turn on the Iconix FX15 Monitor, press the 'ON' button the display will show the firmware version (e.g. P5.06) then display the current weight in the wagon.
- 2. The load weight will be displayed in tonnes.
- 3. If the display does not read "0.00" when empty, press the "zero" button.
- 4. The weight will increase as the wagon is loaded with material.
- 5. The display will retain the weight over "0.25" tonnes if the display is turned off while still loaded.
- 6. The weight reading will decrease as the load is fed out. Note: the wagon will need to be stationary to get the most accurate reading.
- 7. If the display is zeroed with material still in the wagon, it will display a negative weight as the material is fed out. In this case press the "zero" button to display to "0.00" when finished feeding out.





Load Cell System

PROBLEM 1:	No Display on Iconix FX15 Monitor
SOLUTION:	 Plug the FX15 Monitor into an alternative power source to eliminate potential battery issues. If an external power cable is used, please try another power cable. If there is still no reading please try another display to determine if the fault is within the lconix display unit or the load cells. If an alternative display works the original unit is likely to be faulty and will need to be returned to the manufacturer for diagnosis and repair.
PROBLEM 2:	Display Monitor Reads Blank " "
SOLUTION:	 This may mean that the display is over or under range and is reading a faulty signal. Check load bar signal cable plug and power cable plug for moisture. Check load bar signal cable (black) for damage. Unplug each load cell cable one at a time by unscrewing the Green Screw Terminal Block found in image below. If display starts reading weight again with one load cell cable disconnected, check this cable for damage. If no damage is found to the cable, the load cell connected to that cable would need to be replaced. The resistance of the load cell can also be tested to determine a faulty load cell. Using a high quality multimeter set to resistance (Ω ohms) test the resistance between the green and white wires (typically 352 Ω ±1%). Also test the resistance between the red and black wires (typically 380 Ω ±1%). All load cells should be close in readings. If one is significantly different it will need to be replaced.
PROBLEM 3:	Unstable weight reading does not settle.
SOLUTION:	 This usually means there is moisture present in the monitor system. Check load bar signal cable plug (black) in bottom of display for moisture. If moisture is found, dry out. Put FX15 Iconix Monitor in hot water cupboard overnight. Check junction box for moisture. Check glands are tight on load cell cables. If reading still unstable unplug load cell cables one at a time by unscrewing the wires from the green terminal block to see if one is faulty. If it is determined one is causing the reading to be unstable, check cable for damage. If no damage is found, load cell needs to be replaced. Check load cell resistance as indicated in problem 2, solution step 4. If unable to find individual load cell cable causing instability, unscrew all load cell cables from junction board. If weight still unstable replace load bar signal cable (black) from junction box to display.

Junction Box for PT5100 System

Ref	Description
1	Green Screw Terminal Block (1 for every 6 load bar)
2	M12 Gland for Load cell Cables (6 in total for PT5100 System)
3	M16 Gland for Load bar Signal Cable





General

Problems	Questions	Solutions
The wagon is connected to the tractor but nothing is moving when the system is engaged.	1. Are both the hoses to from the tractor rigid?	 The Return Quick Release Coupling (QRC) may be faulty. Replace and retry.
	2. Are there any mechan jams?	Check each drive system for mechanical faults.
The conveyor works but the ele- vator and the floor do not move.	1. Is there enough oil flo	 N? Check oil flow Increase tractor RPM
	2. Does the tractor hydra have a RAM & Motor S	• Make sure hydraulics is set to motor setting. etting?

Conveyor Drive System

Problems	Questions	Solutions
The conveyor stops working.	 Are you able to manually pull the bars around conveyor? Note: May need to discon- nect motor drive. 	 The chains may be too tight. Bearing in shaft may be seized. May be physical damage to frame of conveyor and the bars may be pinching underneath. May be material wrapped around idler shaft jamming against end of conveyor bed.
	2. Is the motor drive coupling damaged?	• Remove motor box and check the coupling and rubber element for damage. Replace if damaged.
	3. Is the Fixed Setting Flow Con- trol (Fig 5: #1) in the Hydraulic Cartridge Valve blocked?	• Remove the Fixed Setting Flow Control (Fig 5: #1) from the Hy- draulic Cartridge Valve to check for foreign materials. Remove debris if found.
The conveyor bars are move slowly.	1. Has the FRDA LAN (Fig 5: #1) setting been altered?	• Check setting of Fixed Setting Flow Control (Fig 5: #1). Undo the lock nut. Wind clockwise to increase speed. Wind anti-clockwise to decrease speed.

Elevator Drive System

Problems	Qu	estions	So	lutions
The elevator chain keeps jumping off sprockets.	1.	Are the sprockets in good condi- tion?	•	Check that the gap between the sprocket plates is parallel and that the tips of the sprocket are present and flared out. Check that the cleaner between sprocket plates is still present.
	2.	Is there a twist in the chain?	•	Check the chain around the joiner for twist.
The teaser bar system will not move or it moves slowly.	1.	Is there enough oil flow to run the elevator?	•	Check oil flow using flow metre. Turn flow rate up on tractor hydraulics Try increase tractor RPM Check control stick setting. If open too far (> 1 turn from stop) then the floor will steal oil from the elevator circuit. Turn clock- wise fully to undo the control stick pointer and stop floor com- pletely. Turn anti-clockwise until the floor starts moving. Lock floor speed pointer in the stop position.
	2.	Is there a block in the Unload Sensing Valve (DPBB cartridge, #4)?	•	Check the Unload Sensing Valve (Fig 5: #4) in the Valve block for any foreign material. Remove if found. Make sure the piston in- side the stem of the cartridge moves freely and is not jammed.
	3.	Is the Dampening Orifice (#7) in the Hydraulic Cartridge Valve blocked?	•	Remove the Unloading Sensing Valve (Fig 5: #4). Use a 5/32 allen key to remove the grub screw (Fig 5: #7) at the end of the cham- ber. Check the 0.7mm hole is clear.
	4.	Is there anything jammed in and around the sprockets?	•	Remove any debris.
	5.	Is the tension of the chains cor- rect?	•	Looking through the conveyor opening, the elevator bars must touch and put pressure on the centre spring loaded guides. If the spring is not pumping when operating then it needs to be tightened. Do not over tighten, as the spring loaded tension guides must retain their full range of movement.
	6.	Are the drive shaft bearings in good condition?	•	Replace the bearings if they are in poor condition.
	7.	Are the molly bush bearings in the idler shaft in good condition?	•	Replace the bearings if they are in poor condition. Clear out any string/vegetation wrapped around the shaft and bearings.
	8.	Is there a twist in the chain?	•	Check the chain around the joiner for twist.

Floor Drive System

Problems	Qu	estions	So	Solutions	
Floor chain keeps jumping off sprockets.	1.	Are the sprockets in good con- dition?	•	Check that the gap between the sprocket plates is parallel and that the tips of the sprocket are kinked out. Check that the cleaner between sprocket plates is still present.	
	2.	Is there a twist in the floor chains?	•	Check that the cleaner between plates are still present.	
	3.	Are the floor bars bent?	•	Replace the floor bars if they are badly bent and damaged. It is important not to operate the wagon when floor bars are bent.	
	4.	Is the chain tension correct?	•	The chain must touch all of the six underbody guide pads with a sag between pads of approximately 50 mm. Quick check that the horizontal link of chain is level with bottom of RHS.	



Floor Drive System Continued

Problems	Qu	estions	So	lutions
The floor will not move or it moves slowly	1.	Is there enough oil flow from the tractor?	•	Check the oil flow by using a flow meter. There must be 50-60 litres. Increase tractor RPM.
	2.	Are the front drive shaft bushes greased sufficiently?	•	Grease floor shaft bushes frequently.
	3.	Are the floor sprockets in good condition?	•	Check that the gap between the sprocket plates is parallel and that the tips of the sprocket are kinked out. Check that the cleaner between sprocket plates is still present.
	4.	Is the control stick connected securely to the stainless block in the Needle Valve (Fig 5: #5)?	•	Check that the hose clamps are securely connected to the con- trol stick to Needle Valve (Fig 5: #5) and then turn together.
	5.	ls the Sensing Orifice (Fig 5: #6a) in the Hydraulic Cartridge Valve blocked?	•	Remove the zero leak plug (Fig 5: #10) on the top surface of the valve block and use 5/32 allen key to remove the grub screw at the end of the chamber. Check the 0.7mm hole is clear.
The floor moves forward but will not stop moving causing the eleva- tor to jam.	1.	Have the control stick settings been altered?	•	Undo grub screw (Fig 5: #7) on pointer and turn clockwise fully to stop the floor. Then turn the control stick anti-clockwise un- til floor starts to move. At the point it starts to move, lock the pointer in the stop position.
	2.	Is the Unloading Sensing Valve (Fig 5: #4) working properly?	•	If this cartirdge does not open when the elevator loads up the floor pressure may increase to the point where the floor bars can be bent rearwards leading to failure of the chain and bar welds. Excessive pressure may also be applied to side elevator panels. Generally the machine bind up and jams. Remove the Unload Sensing Valve (Fig 5: #4) from the Hydraulic Valve Block and check for foreign material. Make sure piston in- side the stem of the cartridge moves freely and is not jammed. To confirm sensor is working properly, when feeding out you should see the floor pause/stop as the elevator loads up. It should then start moving again as it unloads. Turning the stem anti-clockwise will increase the lendgth of the floor pause/stop. Do not adjust the sensor more than 1/8 turn at a time. Note: Turning the stem clockwise more than 1/4 turn from fac- tory setting may lead to serious damage to the machine. If in doubt order a newly calibrated cartridge from the manu- facturer.
The floor stops and will not go in reverse however the elevator and cross conveyor still works.	1.	Is the Flow Compensator (LHDA XEN, #3) in the Hydraulic Car- tridge Valve jammed open?	•	Check for foreign material in the Flow Compensator (Fig 5: #3). Make sure the piston up stem is moving freely.

Figure 5: Hydraulic Cartridge Valve



Reference	Part No.	Description
1	FRDA LAN	Fixed Setting Flow Control
2	CXDA ZAN	Check Valve
3	LHDA XEN	Flow Compensator
4	DPBB LCN	Unload Sensing Valve
5	NFCD LFN	Needle Valve
ба	1/16"NPT x 0.7mm	Sensing Orifice
6b	1/16"NPT x 0.7mm	Bleed Orifice
7	1/8"BSPT x0.7mm	Dampening Orifice
8	CXBG XAN	Check Valve
9	22S-S08	3/4" UN Plug
10	-	Zero Leak Plug



APPENDIX 1

Flow Control Adjustment for Conveyor



1. Locate Speed Control Cartridge

Locate the Speed Control Cartridge in the front of the wagon. Use a 9/16" socket to undo the lock nut. Use 5/16" allen key to adjust screw.



2. Make Adjustments

Wind Screw fully out for initial setting (anti-clockwise). Test speed of conveyor, if more speed is required wind screw in - turn clockwise. You have up to 7 turns of adjustment.

3. Tighten Lock Nut

When desired conveyor speed is reached tighten lock nut.



CAUTION

Adjustment from factor settings is not recommended. Increasing the chain and bar speed may reduce chain life. Decreasing speed may cause conveyor to stall and machine to block. Seek advise from manufacturer.





Proudly Manufactured by Coombridge Industries Ltd.

114 Coonoor Road, Watlington Timaru, New Zealand, 7910 Tel.: +64 3 6885067 info@cilmachinery.com • www.agtrailer.com

© Coombridge Industries Ltd 2015